



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,968	06/27/2003	Timothy J. Doyle	RIA 57692/CIP	7434
26748	7590	07/14/2004	EXAMINER	
SYNGENTA CROP PROTECTION, INC. PATENT AND TRADEMARK DEPARTMENT 410 SWING ROAD GREENSBORO, NC 27409			WARD, PAUL V	
			ART UNIT	PAPER NUMBER
			1623	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,968

Applicant(s)

DOYLE ET AL.

Examiner

PAUL V WARD

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. The term "substituted" in claims 1, 11, 32, and 36 renders the claim indefinite. In the absence of the specific moieties intended to effectuate modification by "substitution" or attachment to the chemical core claimed, the term "substituted" renders the claims in which it appears indefinite in all occurrences wherein applicant fails to articulate by chemical name, structural formula or sufficiently distinct functional language, the particular moieties applicant regards as those which will facilitate substitution, requisite to identifying the composition of matter claimed.

2. Claims 2-10, 12-31, 33-35, and 37-38 are indefinite because they are dependent claims that depend on indefinite claims 1, 11, 32 and 36 for using the relative term "substituted".

3. Claims 1 and 9 are indefinite. Claim 1 is indefinite for using the phrases "a substituent which can be converted to hydrogen" and "a compound that can substitute for phosgene". Claim 9 should be cancelled and Claim 1 should include the compounds that are listed in dependent claim 9.

Art Unit: 1623

4. Claim 10 is indefinite for the phrase "compound that can substitute for phosgene" in steps "a" and "c".

5. Claims 14-17 are indefinite because they are dependent claims that are not further limiting. The recitation in a dependent claim of the "source of an active agent" (i.e., imidoxy chloride) to be used in the method from which said claim depends, wherein the source of said active agent does not result in a patentably distinguishable methodological and manipulative difference in how said active agent's source impacts the method from which it depends, renders the claims in which it occurs and which depend therefrom indefinite for failing to distinctly articulate how such a recitation further limits the method from which said dependent claims applicant regards as the invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1623

6. Claims 1-38 rejected under 35 U.S.C. 103(a) as being unpatentable over Pavlenko et al. (Russian Journal) in view of Mais et al. (U.S. Patent 6,441,171).

Applicant claims a method for synthesizing 4,6-dichloropyrimidine and other chlorinated pyrimidines by reacting imidoyl chlorides with phosgene. Applicant further limits the methods by varying the constituents to the imidoyl chloride compounds, phosgene compounds, temperature and pressure.

Mais teaches the production of 4,6-dichloropyrimidine by chlorination of a compound with phosgene in the presence of nitrogen-containing compounds. (See column 1, line 23 and column 3, Examples 1 and 2). Additionally, Mais teaches that the R group can include C₁-C₁₀ alkyl group. (See column 1, lines 30-35). Further, Mais teaches that the method can be carried out at temperatures in the range from 0-200 °C, and include a pressure range from 1.45-725 psig. (See column 2, lines 16-20).

Mais does not teach the cyclization reaction to form the pyrimidine structure.

Pavlenko teaches cyclization of chloroformamidines to pyrimidines. (See abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method Mais, by including the cyclization step as taught by Pavlenko to attain the advantages of such as disclosed by Pavlenko. Thus, the instant claims are deemed obvious by the disclosure of the noted reference.

7. Claims 1-38 rejected under 35 U.S.C. 103(a) as being unpatentable over Glushkov et al. (Russian Journal) in view of Mais et al (U.S. Patent 6,441,171).

Art Unit: 1623

Applicant claims a method for synthesizing 4,6-dichloropyrimidine and other chlorinated pyrimidines by reacting imidoyl chlorides with phosgene. Applicant further limits the methods via various properties, such as by varying the temperature and pressure.

Mais teaches the production of 4,6-dichloropyrimidine by chlorination of a compound with phosgene in the presence of nitrogen-containing compounds. (See column 1, line 23 and column 3 Examples 1 and 2). Additionally, Mais teaches that the R group can include C₁-C₁₀ alkyl group. (See column 1, lines 30-35). Further, Mais teaches that the method can be carried out at temperatures in the range from 0-200 °C, and include a pressure range from 1.45-725 psig. (See column 2, lines 16-20).

Mais does not teach the cyclization reaction to form the pyrimidine structure.

Glushkov teaches cyclization of aminoimidazol-2-ine derivatives and chloroformamidines to pyrimidines. (See abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method Mais, by including the cyclization step as taught by Glushkov to attain the advantages of such as disclosed by Glushkov. Thus, the instant claims are deemed obvious by the disclosure of the noted reference.

Conclusion

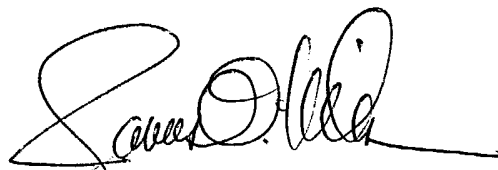
Claims 1-38 are pending. Claims 1-38 are rejected. No claims are allowed.

Art Unit: 1623

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL V WARD whose telephone number is 571-272-2909. The examiner can normally be reached on M-F 8 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600